REMARKS

The Applicants and the undersigned thank Examiner Pham for the careful review of this application. Claims 31-50 and 61-65 have been rejected while Claims 51-60 have been withdrawn from consideration by the Examiner in view of a restriction requirement. Upon entry of this amendment, Claims 31-78 are pending in this application.

The independent claims are Claims 31, 42, 51 (withdrawn), 61, 66, and 74. Consideration of the present application is respectfully requested in light of the above amendments to the application and in view of the following remarks.

Election with Traverse of Group I Claims

The Applicants appreciate the Examiner acknowledging the Applicants election with traverse of the Group I claims. By traversing the requirement, the Applicants have preserved their right to petition this requirement should the Applicants believe that this action is necessary under 37 C.F.R. § 1.144.

The Examiner's restriction requirement separated the claims as follows:

Group I - Claims 31-50 and 61-65 (a method for interfacing with a multi-level structure by selecting a concept object, displaying a first image, one or more second images, etc.);

Group II - Claims 51-60 (method for displaying and creating relationships between different medical sources by selecting a medical concept, displaying a billing code, medical code, etc.).

The Applicants note that new Claims 66-78 are commensurate with the Group I claims that have been elected by the Applicants. In other words, these claims are not different from the Group I claims because they describe methods for interfacing with a multi-level data structure by selecting a concept object which is one of the main characteristics of the Group I claims as noted by the Examiner in the restriction requirement mailed on July 14, 2003 and the Office Action of May 6, 2004.

Therefore, the Applicants respectfully submit that these new claims are part of the elected Group I claims and are fully in compliance with M.P.E.P. §821.03 and 37 C.F.R.

§ 1.145.. Accordingly, consideration and an indication by the Examiner that these claims are allowable over the prior art of record are respectfully requested.

Claims 51-60

The Applicants have not cancelled Claims 51-60 because the Examiner's Office Action of May 6, 2004 was not final in nature. The Applicants note that Claims 51-60 must be cancelled only if the Examiner maintains the requirement AND in response to a final Office Action. However, cancellation of these claims is not required under the rules in response to a final restriction requirement that is part of a non-final Office Action. See M.P.E.P. § 821.01, first column, last paragraph and form paragraph 8.24 that recites "final rejection."

However, if the Examiner determines that the elected claims are allowable over the prior art of record and the Examiner would like authorization to cancel the non-elected, withdrawn claims to place the application in condition for allowance, the Examiner is invited to contact the undersigned for such authorization.

Objection to the Drawings

The Examiner advised that new corrected drawings were required in view of the Draftsperson's Patent Drawing Review. The Applicants have attached replacement drawings to this paper that correct informalities as noted in the Draftsperson's Patent Drawing Review. Consideration and approval by the Examiner of these corrected, replacement drawings are respectfully requested.

Objection to the Claims

The Examiner objected to Claim 62 because of an informality. The informality was typographical error in this claim. The Applicants have amended this claim in accordance with the Examiner's helpful comments. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Claim Rejections under 35 U.S.C. §103(a)

The Examiner rejected Claims 31-45, 50, 61-62, and 64-65 under 35 U.S.C. § 103(a) as being obvious over a printed publication entitled, "Java Interface to Human Anatomy Knowledge" authored by Pietro Cerveri et al. and published in the year 2000 (hereinafter the "Cerveri" reference). The Examiner rejected Claims 46-49 and 63 under 35 U.S.C. § 103(a) as being obvious over the Cerveri reference in view of U.S. Pat. No. 5,325,293 issued on June 28, 1994 in the name of Dorne (hereinafter, the "Dorne" reference). The Applicants respectfully offer remarks to traverse these pending rejections.

Independent Claim 31

The rejection of Claim 31 is respectfully traversed. It is respectfully submitted that the Cerveri and Dorne references fail to describe, teach, or suggest the combination of (1) selecting a concept object stored in a multi-level data structure; (2) displaying a first image in a central region of an area, the first image comprising the selected concept object; (3) displaying one or more second images above the first image, each second image comprising a parent concept object of the selected concept object; (4) displaying a first symbol along a geometrical ray originating from the first image and illustrating an association between each second image to the first image; (5) if the selected concept object has one or more child concept objects, displaying one or more third images below the first image, each third image comprising one of the child concept objects of the selected concept object, and displaying a second symbol along a geometrical ray originating from the first image and illustrating an association between each third image and the first image; and (6) if the selected concept object has one or more lateral concept objects, displaying one or more fourth images along a geometrical ray originating from the first image and, each fourth image comprising a lateral concept object of the selected concept object, and displaying a third symbol illustrating an association between each fourth image and the first image, as recited in amended Claim 1.

The Cerveri reference describes a database accessible over the Internet in which anatomical concepts have been organized into a hierarchical framework. The system permits term queries that allow retrieving concepts containing or exactly matching a submitted keyword. The system provides a semantic access to anatomical information through using a client application that accesses a server over the internet. See the abstract of the Cerveri reference, page 384.

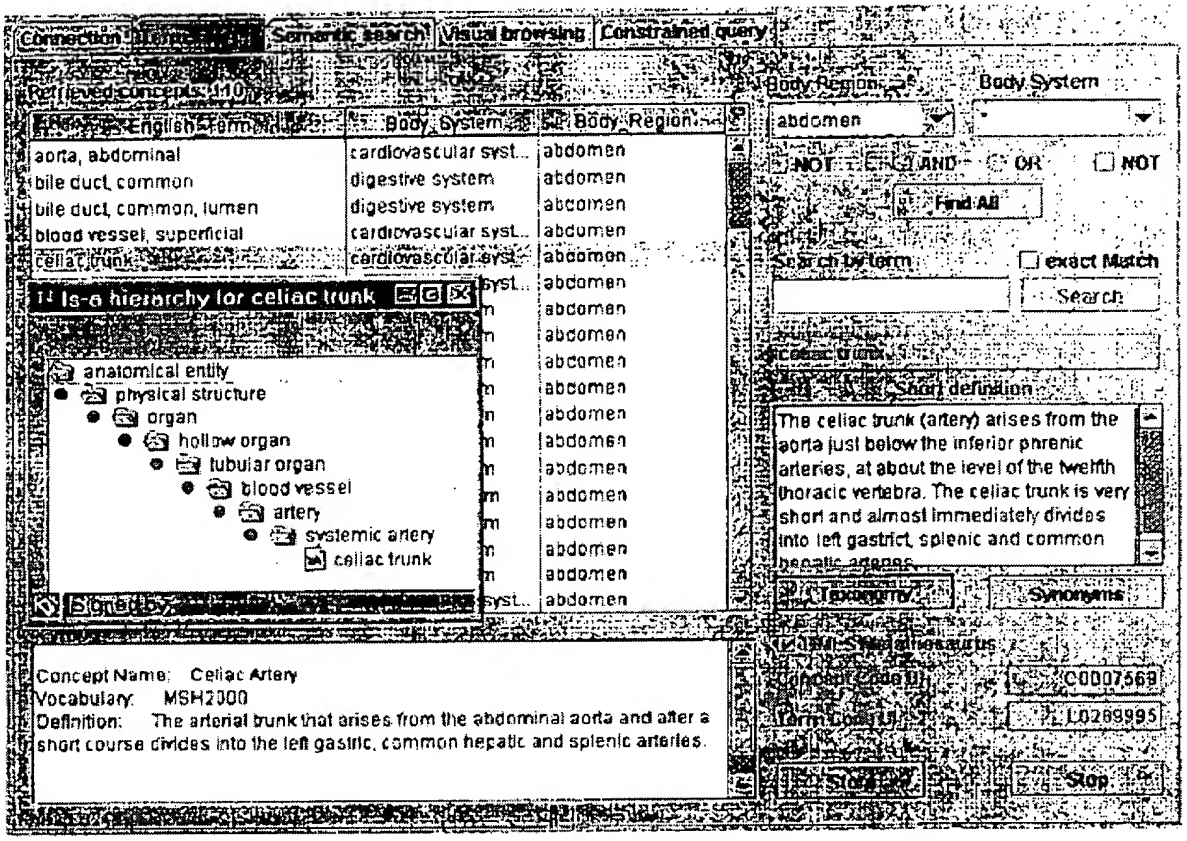


Figure 4 of the Cerveri reference reproduced above illustrates client software in which a user can access anatomical terms stored on central server through user-defined keywords that are mapped to a synonyms table into an anatomy knowledge database. The Cerveri reference explains that user can directly retrieve terms belonging either to a specific body region or body system. The Cerveri reference explains that taxonomic classification and synonyms can be obtained by picking a term into a retrieved list. See the caption of Figure 4 on page 388 of the Cerveri reference.

Specific Example of Conventional Display of Concept Objects illustrated by Figure 4 of the Cerveri Reference

Figure 4 of the Cerveri reference illustrates the functionality of the term search panel of client software. See the "Term Search" folder tab at the top of Figure 4 that is highlighted and that is adjacent to the leftmost "Connection" folder tab. In Figure 4, the user has typed-in the term of "celiac trunk" in the "Search by Term" work space located on the rightmost section of the user interface. In response to searching for the "celiac trunk" entry, the user interface of Cerveri displays a short definition of the searched term in the "Short Definition" rectangular space below the search term. The Cerveri user interface also displays a "Concept Code" and a "Term Code" beneath the "Short Definition" rectangular space that is associated with the searched term of "celiac trunk." See Figure 4 of Cerveri reproduced above.

In addition to displaying the "Concept Code" and "Term Code," the Cerveri user interface produces and displays a synonyms table of an Anatomy Knowledge Database in which the searched term is mapped. Specifically, a list of anatomical instances that satisfy the submitted query is presented as a table result in which each instance is associated to a body region and a functional system. See the Cerveri reference, second column, last paragraph, page 387; the "Retrieved Concepts 110" table that includes three columns titled, "English Term," "Body System," and "Body Region." For the searched term "celiac trunk" as illustrated in Figure 4, the term is listed in an "English Term" column of the table. Its corresponding term in the "Body System" column is "cardio vascular syst." and its corresponding term in the "Body Region" column is "abdomen."

If a term in the "English Term" column is further selected, another window containing additional information about the search term can be displayed by the Cerveri user interface. For example, when the search term "celiac trunk" is further selected from the "English Term" column, the Cerveri user interface can display a taxonomic hierarchy in a new window for this term. See Figure 4 of the Cerveri interface and the new window titled, "Is-a hierarchy for celiac trunk."

The Cerveri Reference Does Not Provide a Multi-Level Data Structure Interface that Displays Related Concept Objects in Predefined Geometric Orientations that are Dependent on their relationship with a Selected Concept Object.

As illustrated in Figure 4, the Cerveri reference provides a user interface that displays information about concepts in tables and conventional text listed in rectangular windows. Opposite to the Cerveri reference, the invention of amended Claim 31 describes the display of images comprising concept concepts with specific geometrical relationships that cannot be characterized as tables or conventional text listed in rectangular windows. Amended Claim 31 describes a selected concept object and how other related concept objects are positioned in predetermined areas around the concept object based on the relationship of a concept object to the selected concept object. Amended Claim 31 also describes how concept objects related to a selected concept object can be associated by using a symbol that is positioned along a geometrical ray originating from the first image comprising the first concept object. The Cerveri reference does not provide a multi-level data structure interface that displays related concept objects in predefined geometric orientations that are dependent on their relationship with a selected concept object.

The Dorne Reference

The Examiner admits that the Cerveri reference does not provides any teaching of attributes of a selected concept object in a second viewing area in which an attribute is a billing code. To make up for this billing code deficiency of the Cerveri reference, the Examiner relies upon the Dorne reference.

Figure 3G of the Dorne reference illustrates an interactive program display that is generated in response to a user clicking on any CPT code 152 listed in the codes field on the bottom right of the screen display. See Figure 3G of the Dorne reference reproduced below.

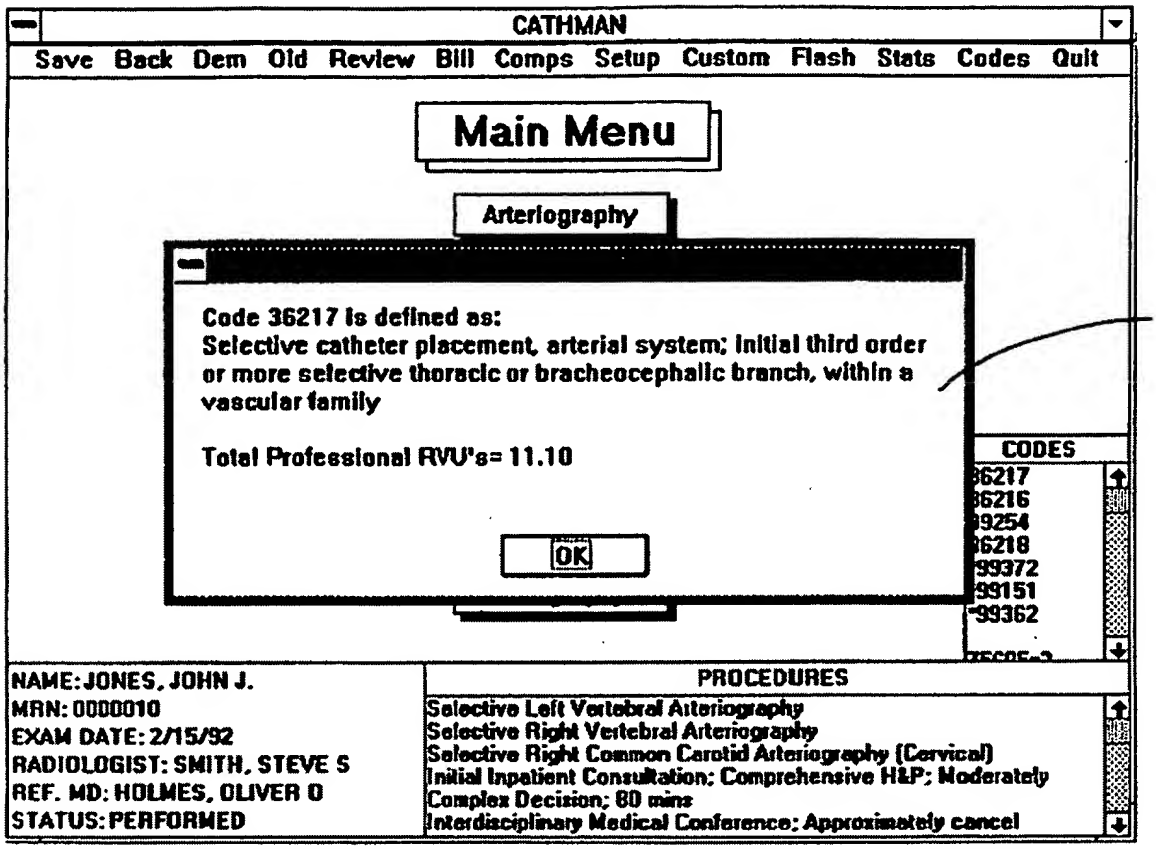


FIG. 3G

The interactive program of the Dorne reference displays a dialog box 160 containing the selected CPT code, as well as the CPT description for the APT code and a total professional RVU value for that code. Specifically, Figure 3G illustrates a dialog box that is displayed by the interactive program if a user clicks on the 36217 code in the displayed codes field 156. The displayed codes field 156 is positioned on the bottom right of the screen display illustrated above. See the Dorne reference, column 7, line 17-24.

Similar to the Cerveri reference, the Dorne reference does not provide a multi-level data structure interface that displays related concept objects in predefined geometric orientations that are dependent on their relationship with a selected concept object. Instead, like the Cerveri reference, the Dorne reference displays information in a conventional manner in which related text is merely listed in a new window.

In light of the differences between Claim 31 and the Cerveri and Dorne references, one of ordinary skill in the art recognizes that these prior art references, alone

or in combination, cannot anticipate or render obvious the recitations as set forth in amended independent Claim 31. Accordingly, reconsideration and withdrawal of the rejection of Claim 31 are respectfully requested.

Independent Claim 42

The rejection of Claim 42 is respectfully traversed. It is respectfully submitted that the Cerveri and Dorne references, fail to describe, teach, or suggest the combination of (1) a computer; a display communicably connected to the display; (2) a memory communicably connected to the computer for storing the multi-level data structure; (3) a computer program resident on the computer for: (4) selecting a concept object stored in the multi-level data structure, (5) displaying a first image comprising an alphanumeric string representing the selected concept object on the display, (6) displaying one or more second images on the display, each second image comprising an alphanumeric string representing a parent concept object of the selected concept object and displaying a first symbol on the display illustrating an association between each second image and the first image; (7) if the selected concept object has one or more child concept objects, displaying one or more third images on the display, each third image comprising an alphanumeric string representing a child concept object of the selected concept object and displaying a second symbol on the display illustrating an association between each third image and the first image; (8) if the selected concept object has one or more lateral concept objects, displaying one or more fourth images on the display, each fourth image comprising an alphanumeric string representing a lateral concept object of the selected concept object and displaying a third symbol on the display illustrating an association between each fourth image and the first image; and (9) receiving input for one of modifying, removing, and creating relationships between concept objects, as recited in amended Claim 42.

The Cerveri Reference Does Not Provide a Multi-Level Data Structure Interface that Permits Changes to the Underlying Data Structure

As noted above with respect to Claim 31, the Cerveri reference provides a user interface as illustrated in Figure 4 that allows access to a multi-level data structure. However, the Cerveri reference does not provide a user interface that permits changes to

the multi-level data structure. The Cerveri reference explains that its data structure is based on two standard anatomy books and the Unified Medical Language System (UMLS). See the Cerveri reference, page 385, second column, second to last paragraph. The Cerveri reference can be characterized as "static" in that the information contained in its database cannot be changed with a user interface that displays selected concept objects. Unlike the "static" Cerveri reference, the invention as described in amended Claim 42 is more "dynamic" in that it can receive input for one of modifying, removing, and creating relationships between concept objects.

The Dorne Reference Does Not Provide a Multi-Level Data Structure Interface that Permits Changes to the Underlying Data Structure

Similar to Cerveri reference, the Dorne reference can also be characterized as "static" with respect to its user interface that displays concept objects. The Dorne reference does not permit changes to its concept objects with its user interface. The Dorne reference explains that its interactive computer program generates CPT codes "automatically" without requiring users to enter the codes themselves and that a user does not need any detailed knowledge of CPT coding techniques to code examination procedures quickly and accurately. See the Dorne reference, column 4, lines 53-58. In light of this, one of ordinary skill in the art recognizes that the computer program of the Dorne reference is not designed to allow a user to modify any of the underlying information stored in its databases.

Meanwhile, opposite to both "static" systems of the Cerveri and Dorne references, the "dynamic" system as recited in amended Claim 42 can receive input for one of modifying, removing, and creating relationships between concept objects from the same system that displays the concept objects.

In light of the differences between Claim 42 and the references mentioned above, one of ordinary skill in the art recognizes that the prior art references, alone or in combination, cannot anticipate or render obvious the recitations as set forth in amended independent Claim 42. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Independent Claim 61

The rejection of Claim 61 is respectfully traversed. It is respectfully submitted that the Cerveri and Dorne references, fail to describe, teach, or suggest the combination of (1) selecting a medical concept object stored in the multi-level data structure; (2) displaying a first image comprising the selected medical concept object; (3) displaying one or more second images, each second image comprising a parent medical concept object of the selected medical concept object; (4) displaying a first graphical element representing an association between each second image to the first image; (5) if the selected concept object has one or more child medical concept objects, displaying one or more third images, each third image comprising one of the child medical concept objects of the selected medical concept object, and displaying a second graphical element representing an association between each third image and the first image; (6) if the selected concept object has one or more lateral medical concept objects, displaying one or more fourth images, each fourth image comprising a lateral medical concept object of the selected concept object, and displaying a third graphical element representing an association between each fourth image and the first image; and (7) receiving input for one or more of the following: (a) modifying a relationship between two or more concept objects; (b) removing a relationship between two or more concept objects; (c) creating a relationship between two or more concept objects; and (d) creating new concept objects, as recited in amended Claim 61.

As noted above with respect to independent Claim 42, neither the Cerveri reference nor the Dorne reference provide a "dynamic" multi-level data structure interface that permits changes to the underlying data structure and that displays concept objects. This means that neither reference provides an interface that receives input for one or more of the following: (a) modifying a relationship between two or more concept objects; (b) removing a relationship between two or more concept objects; (c) creating a relationship between two or more concept objects; and (d) creating new concept objects, as recited in amended Claim 61.

In light of the differences between Claim 61 and the Cerveri and Dorne references mentioned above, one of ordinary skill in the art recognizes that the prior art references, alone or in combination, cannot anticipate or render obvious the recitations as set forth in

amended independent Claim 61. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Independent Claim 66

It is respectfully submitted that the Cerveri and Dorne references, fail to describe, teach, or suggest the combination of (1) receiving a selection of a first concept; (2) in response to receiving the selection, displaying a first concept object in a central region of an area, the first concept object corresponding to the selected first concept; (3) displaying one or more second concept objects in a radial manner relative to the first concept object such that the one or more other second concept objects are positioned outside the central region occupied by the first concept object; and (4) receiving input for one of: (a) modifying a relationship between two or more concept objects; (b) creating a relationship between two or more concepts objects; (c) removing a relationship between two or more concept objects; and (d) creating a new concept object, as recited in new Claim 66.

As noted above with respect to independent Claim 42, neither the Cerveri reference nor the Dorne reference provide a "dynamic" multi-level data structure interface that permits changes to the underlying data structure and that displays concept objects. This means that neither reference provides an interface that receives input for one or more of the following: (a) modifying a relationship between two or more concept objects; (b) creating a relationship between two or more concepts objects; (c) removing a relationship between two or more concept objects; and (d) creating a new concept object, as recited in new Claim 66. Further, the Dorne and Cerveri references also do not teach displaying one or more second concept objects in a radial manner relative to the first concept object such that the one or more other second concept objects are positioned outside the central region occupied by the first concept object.

In light of the differences between new Claim 66 and the Cerveri and Dorne references mentioned above, one of ordinary skill in the art recognizes that the prior art references, alone or in combination, cannot anticipate or render obvious the recitations as set forth in amended independent Claim 66. Accordingly, consideration and an indication of allowability for this claim are respectfully requested.

Independent Claim 74

It is respectfully submitted that the Cerveri and Dorne references, fail to describe, teach, or suggest the combination of (1) a computer; (2) a display communicably connected to the computer; (3) a memory communicably connected to the computer for storing the two or more nomenclatures; (4) a computer program resident on the computer for: (5) mapping a first concept object of to an area on the display; (6) mapping one or more second concept objects to the area and along a perimeter that circumscribes the first concept object; (7) receiving input for creating a new concept object having a relationship with an existing concept object; (8) associating the relationship with a symbol; (9) mapping the new concept object to the area; and (10) mapping the symbol to the area and between the new concept object and one of a first concept object and a second concept object, as recited in new Claim 74.

As noted above with respect to independent Claim 42, neither the Cerveri reference nor the Dorne reference provide a "dynamic" multi-level data structure interface that permits changes to the underlying data structure and that displays concept objects. This means that neither reference provides an interface that maps one or more second concept objects to the area and along a perimeter that circumscribes the first concept object and receives input for creating a new concept object having a relationship with an existing concept object.

In light of the differences between new Claim 74 and the Cerveri and Dorne references mentioned above, one of ordinary skill in the art recognizes that the prior art references, alone or in combination, cannot anticipate or render obvious the recitations as set forth in amended independent Claim 74. Accordingly, consideration and an indication of allowability for this claim are respectfully requested.

Dependent Claims 32-41, 43-49, 62-65, 67-73, and 75-78

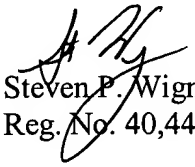
The Applicants respectfully submit that the above-identified dependent claims are allowable because the independent claims from which they depend are patentable over the cited references. The Applicants also respectfully submit that the recitations of dependent Claims 32-41, 43-49, and 62-65, 67-73, and 75-78 are of patentable significance. Accordingly, reconsideration and withdrawal of the rejections of Claims 32-41, 43-49, and 62-65 are respectfully requested. Further, consideration and an early notice of allowability with respect to new claims 67-73 and 75-78 are also respectfully requested.

CONCLUSION

The foregoing is submitted as a full and complete response to the Office Action mailed on May 6, 2004. The Applicants and the undersigned thank Examiner Pham for the consideration of these remarks. The Applicants have submitted remarks to traverse the rejections of Claims 31-50, and 61-65 and to distinguish new Claims 66-78 from the prior art of record. The Applicants respectfully submit that the present application is in condition for allowance. Such Action is hereby courteously solicited.

If any issues remain that may be resolved by telephone, the Examiner is requested to call the undersigned at 404.572.2884.

Respectfully submitted,



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